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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,035	06/28/2005	Toshio Kumagai	Q88236	4010

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EXAMINER	
STEVENOSKY, MARK J	

ART UNIT	PAPER NUMBER
2853	

MAIL DATE	DELIVERY MODE
09/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,035	KUMAGAI ET AL.	
	Examiner	Art Unit	
	Mark John Stevenosky, Jr.	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *2-8 and 17-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,9-14 and 16* is/are rejected.

7)☒ Claim(s) *15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/28/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

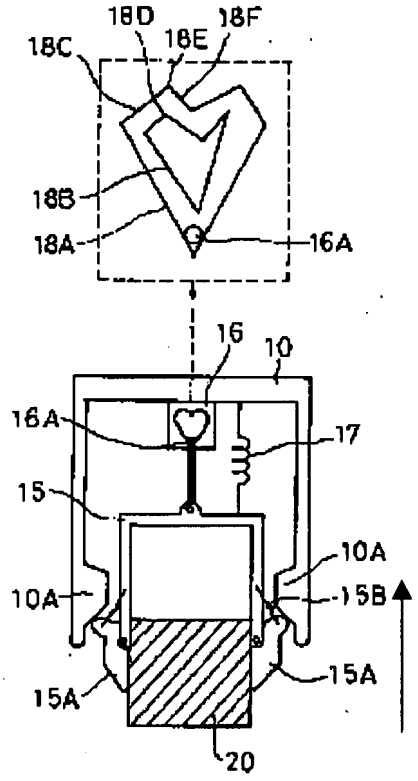
> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Yasuhiro [JP 08-169121A].

Regarding claim 1, Yasuhiro discloses at least the following:

- a liquid ejection apparatus [0001] comprising:
- a cartridge holder [cartridge frame 15], and a
- liquid cartridge [cartridge 20] detachably mounted on the cartridge holder and storing liquid [Figure 1 shows a situation in which cartridge 20 is engaged with frame 15, whereas, Figure 7 displays a situation in which cartridge 20 is not engaged with frame 15, thereby making the cartridge detachably mounted. Also, cartridge 20 contains ink, as it is used as the primary means of ejection [0018]], and
- ejecting the liquid in the liquid cartridge attached to the cartridge holder toward a target [0018; "The controller 8 of the ink jet recording apparatus P sets to the location of the recording paper 23 the carriage 10 with which it is equipped with the ink cartridge 20 by the carriage motor 12 (step S1), and starts printing (step S2)."],

- a slide member [guide 16A] and a
- rotating member [hold pawl 15A], wherein
- said slide member is slidably supported at said cartridge holder [guide 16A is slidably supported in lock 16 and connected by an unlabeled guide bar to frame 15],
- the slide member slides along an insertion direction [guide 16A slides in a direction with at least some component in the direction of the direction in which cartridge 20 is being slid] of the liquid cartridge between a first position and a second position [the position displayed in Figure 2 will be considered the first position, and while any of the positions displayed in any of Figures 3, 4 or 5 could be regarded as the second position, examiner is choosing the position displayed in Figure 4 as the second position], and
- the insertion direction is a direction in which the liquid cartridge is inserted into the cartridge holder when the liquid cartridge is attached to the cartridge holder [the direction of insertion is indicated by the arrow provided by examiner below], and



- said rotating member is rotatably supported at said cartridge holder [pawl 15A is rotatably supported by an unlabeled element that is directly attached to frame 15],
- rotation of the rotating member is linked to the slide of said slide member [The term link is a broad recitation and thus can have multiple reasonable interpretations. In the instant case, examiner has interpreted the word link to mean that the movement of guide 16A from the first position to the second is concurrent with the rotation of pawl 15A from the first position to the second position. They are also linked in the sense that they are both directly connected to frame 15.], and

- when the slide member moves to the second position from the first position, the rotating member displaces so as not to allow the removal of the liquid cartridge from the cartridge holder [when the guide 16A moves to the second position as indicated by Figure 4, pawls 15A are in a locked configuration which would prevent the cartridge 20 from being removed from the holder], and
- when the slide member moves to the first position from the second position, the rotating member displaces to allow removal of the liquid cartridge from the cartridge holder [when the devices returns from the state shown in Figure 4 back to the state shown in Figure 2, the pawls 15A are disengaged with projections 10A and thus allow for the removal of the cartridge]

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

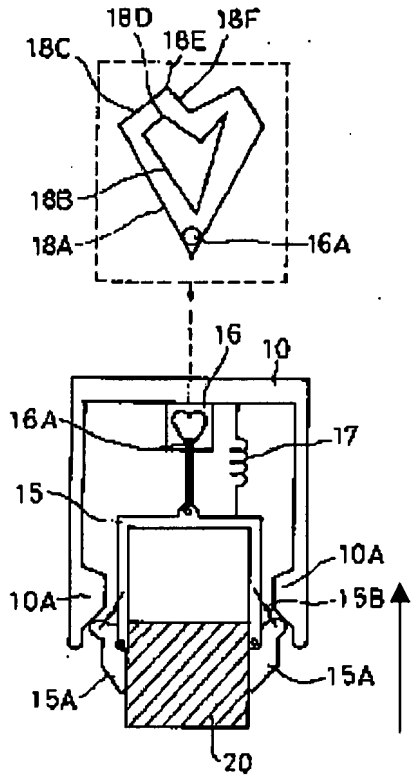
2. Claims 9-14,16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuhiro [JP 08-169121A] in view of Kiyoharu [JP 07-089093].

Regarding claim 9, Yasuhiro discloses:

- ejecting the liquid in the liquid cartridge attached to the cartridge holder toward a target [0018; "The controller 8 of the ink jet recording apparatus P

sets to the location of the recording paper 23 the carriage 10 with which it is equipped with the ink cartridge 20 by the carriage motor 12 (step S1), and starts printing (step S2)."],

- a slide member [guide 16A] and a
- rotating member [hold pawl 15A], wherein
- said slide member is slidably supported at said cartridge holder [guide 16A is slidably supported in lock 16 and connected by an unlabeled guide bar to frame 15],
- the slide member slides along an insertion direction [guide 16A slides in a direction with at least some component in the direction of the direction in which cartridge 20 is being slid] of the liquid cartridge between a first position and a second position [the position displayed in Figure 2 will be considered the first position, and while any of the positions displayed in any of Figures 3, 4 or 5 could be regarded as the second position, examiner is choosing the position displayed in Figure 4 as the second position], and
- the insertion direction is a direction in which the liquid cartridge is inserted into the cartridge holder when the liquid cartridge is attached to the cartridge holder [the direction of insertion is indicated by the arrow provided by examiner below], and



- said rotating member is rotatably supported at said cartridge holder [pawl 15A is rotatably supported by an unlabeled element that is directly attached to frame 15],
- rotation of the rotating member is linked to the slide of said slide member [The term link is a broad recitation and thus can have multiple reasonable interpretations. In the instant case, examiner has interpreted the word link to mean that the movement of guide 16A from the first position to the second is concurrent with the rotation of pawl 15A from the first position to the second position. They are also linked in the sense that they are both directly connected to frame 15.], and

- when the slide member moves to the second position from the first position, the rotating member displaces so as not to allow the removal of the liquid cartridge from the cartridge holder [when the guide 16A moves to the second position as indicated by Figure 4, pawls 15A are in a locked configuration which would prevent the cartridge 20 from being removed from the holder], and
- when the slide member moves to the first position from the second position, the rotating member displaces to allow removal of the liquid cartridge from the cartridge holder [when the devices returns from the state shown in Figure 4 back to the state shown in Figure 2, the pawls 15A are disengaged with projections 10A and thus allow for the removal of the cartridge].

However, Kiyoharu teaches a liquid passage for connecting said head and said cartridge [0022; printheads 30 are connected fluidically to cartridge 11 through tubes 12].

Regarding claim 10, Yasuhiro discloses biasing means [spring means, Figure 2] as well as the rotating member including engaging projections for engaging the cartridge frame [Figure 2].

Regarding claim 11, Yasuhiro disclose a heart shaped locking system with five independent and distinct grooves allowing for the movement of guide 16A.

Regarding claim 12, Yasuhiro discloses the guide 16A acting as a claw member inside the grooves [Figure 2]

Regarding claim 13, Yasuhiro discloses the engagement members engaging in a groove for locking the cartridge [Figure 2].

Regarding claim 14, Yasuhiro discloses spring means for biasing the cartridge and a smaller biasing means 15B for biasing the rotating member in place.

Regarding claim 16, Yasuhiro fails to disclose the communication hole and means to prevent the bending thereof. However, Kiyoharu teaches a hole for pressurization and it being free of bend [Figure 4; 0029]

Given the teachings of Kiyoharu, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Yasuhiro with the invention of Kiyoharu, as doing so would provide more efficient printhead maintenance [0060].

Allowable Subject Matter

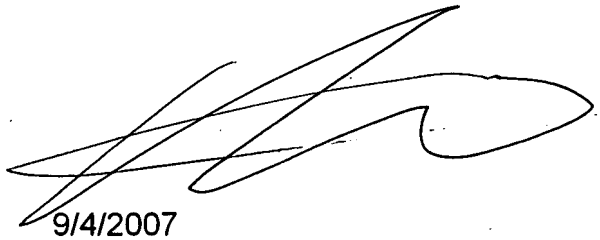
3. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark John Stevenosky, Jr. whose telephone number is (571) 270-1336. The examiner can normally be reached on Monday - Friday, 9AM - 5:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



9/4/2007

Mark John Stevenosky, Jr.
Examiner
Art Unit 2853

MANISH S. SHAH
PRIMARY EXAMINER